

REMARKS

Claims 1, 2, 4, 5, 8, 10, 22, 26 and 29 have been amended, mostly without any intention of narrowing the scope of any of the claims (and indeed broadening the claims in some circumstances). Claim 3 has been canceled without prejudice or disclaimer. Support for the claim amendments may be found throughout the as-filed specification. No new matter has been added. Accordingly, claims 1, 2 and 4-31 are presently pending, of which claims 12-21 are withdrawn as being drawn to a non-elected invention. Reconsideration and allowance of the present claims based on the following remarks are respectfully requested.

Claims 3 and 4 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctively claim the subject matter which Applicant regards as the invention. In particular, the Office Action asserts that the recitation of a Markush grouping of claim elements is improper. Applicant respectfully traverses this rejection for at least the following reasons.

Applicant respectfully submits that the recitation of “wherein said thickness is one of at least 10  $\mu\text{m}$  and at least 20  $\mu\text{m}$ ,” is definite. First, Applicant is not claiming a Markush grouping of claim elements, i.e., materials belonging to a recognized physical or chemical class or to an art-recognized class, but rather an alternative of two claimed ranges of thickness. Further, “[a]lternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims.” MPEP § 2173.05(h). Indeed, the Office Action has not indicated any uncertainty nor ambiguity with respect to the aforementioned claim language. While Applicant has taken the Examiner’s suggestion into consideration, Applicant would like to point out that the language suggested by Examiner is just one acceptable form of alternative expression. *See id.* Lastly, Applicant disagrees with the assertion that “there is no range because the use of ‘at least’ makes the claims open-ended.” For example, courts have found such “open-ended” claim language sufficiently unambiguous to apply prior art. *See* MPEP § 2144.05 (I) (disclosing claim limitation of “more than 5%”).

For at least these reasons, Applicant submits that claim 4 is definite. Claim 3 has been canceled, and thus, the rejection thereof is now moot. Therefore, Applicant requests withdrawal of the rejection of claim 4 under 35 U.S.C. § 112, second paragraph, and that the claim be allowed.

Claims 1, 5-8, 10, 11, 22, 26-29 and 31 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2005/0147920 to Lin ("Lin"). Applicant respectfully traverses this rejection for at least the following reasons.

Applicant submits that the cited portions of Lin fail to disclose or otherwise render obvious a device manufacturing method comprising, *inter alia*, providing a liquid between a substrate and at least a portion of a projection system of a lithographic projection apparatus, wherein a non-radiation sensitive material is carried by said substrate, said non-radiation sensitive material being at least partially transparent to radiation, being of a different material than said liquid, being provided over at least a part of a radiation sensitive layer of said substrate, and having a thickness of at least 5  $\mu\text{m}$ , as recited in claim 1.

For example, claim 10 of Lin discloses that the protective film layer 300 provided over the light sensitive material 116 on substrate 118 has a thickness of less than 1000 Angstroms, which is equal to 0.1  $\mu\text{m}$ . Indeed, the cited portions of Lin make no disclosure of nor render obvious a non-radiation sensitive material carried by the substrate having a thickness of at least 5  $\mu\text{m}$  and rather teach the opposite – a layer that is much thinner.

Further, Applicant submits that the cited portions of Lin fail to disclose or otherwise render obvious a device manufacturing method comprising, *inter alia*, providing a liquid, between a substrate and at least a portion of a projection system of a lithographic projection apparatus, to a non-radiation sensitive material on said substrate, said non-radiation sensitive material, which is at least partially transparent to radiation, provided over at least a part of a radiation sensitive layer of said substrate and having a thickness effective to substantially reduce the effect of bubbles, particles, or both bubbles and particles, in said liquid on the quality of a patterned beam impinging on the radiation sensitive layer.

The cited portions of Lin fail to provide any disclosure or teaching regarding a non-radiation sensitive layer having a thickness effective to substantially reduce the effect of bubbles, particles, or both bubbles and particles, in the liquid on the quality of a patterned beam. The cited portions of Lin appear to make no mention of particles. Further, any references in the cited portions of Lin to bubbles are to the ability of Lin's layer to prevent bubble formation in the liquid, i.e., to prevent outgassing of the radiation sensitive layer, but not to reducing the effect of bubbles already in the liquid. Indeed, Lin's layer is so thin (1000 angstroms or 100 nm) that it will have no effect on reducing the impact of bubbles, particles, or both, in the liquid on image quality. See, e.g., Applicant's specification, paragraph [0051] ("As can be seen in FIG. 5a, bubbles and/or particles 5 in the immersion liquid in a conventional substrate are only 80 nm away (i.e., the thickness of the protective layer 3) from

the radiation sensitive layer 2. In this instance, any bubbles and/or particles on the surface of the substrate can seriously affect the imaging quality, for example, by being within the depth of focus.”)

Accordingly, Applicant submits that the cited portions of Lin fail to disclose or render obvious each and every feature of claims 1 and 22. Claims 5-8, 10, 11, 26-29 and 31 depend respectively from claims 1 and 22, and are, therefore, patentable for at least the same reasons provided above related to claims 1 and 22, and for the additional features recited therein. Thus, Applicant respectfully requests that the rejection of claims 1, 5-8, 10, 11, 22, 26-29 and 31 under 35 U.S.C. § 102(e) over Lin should be withdrawn and the claims be allowed.

Claims 2-4, 9, 23-25 and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin. Applicant respectfully traverses this rejection for at least the following reasons.

As discussed above, the cited portions of Lin fail to disclose or render obvious each and every feature of claims 1 and 22.

Claims 2, 4, 9, 23-25 and 30 depend respectively from claims 1 and 22, and are, therefore, patentable for at least the same reasons provided above related to claims 1 and 22 and for the additional features recited therein. Claim 3 has been canceled, and thus, the rejection thereof is now moot. Thus, Applicant respectfully requests that the rejection of claims 2, 4, 9, 23-25 and 30 under 35 U.S.C. § 103(a) over Lin should be withdrawn and the claims be allowed.

All rejections have been addressed. It is respectfully submitted that the present application is in condition for allowance, and a notice to that effect is earnestly solicited. Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

DIERICHS -- 10/775,326  
Attorney Docket: 081468-0308270

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

  
PILLSBURY WINTHROP SHAW PITTMAN LLP

Jean-Paul Hoffman  
Reg. No. 42,663  
Tel. No. 703.770.7794  
Fax No. 703.770.7901

Date: June 7, 2007  
JPH/EBC  
P.O. Box 10500  
McLean, VA 22102  
(703) 770-7900